3929

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State:

11°—5613

DESCRIPTIVE REPORT.

Hyd. *Sheet No.* 3929

LOCALITY:

191

CHIEF OF PARTY:

3929

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

E. Lester Jones, Superintendent.

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SMOOTH SHEET No. 3929

of

NORTHERN PART of SAN FRANCISCO BAY

from

THE SISTERS TO SOUTHAMPTON SHOAL.

SURVEYED by WIRE DRAG PARTY No. 4.

December 1916

L.O.Colbert, Chief of Party

Scale .. 1:20,000.

DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY.

E. Lester Jones Superintendent.

DESCRIPTIVE REPORT to accompany HYDROGRAPHIC SOUNDING SHEET No. ___.

of

SAN FRANCISCO BAY from SOUTHAMPTON SHOAL to East SISTERS ISLAND.

Limits of Sheet:-

The sheet covers the northern part of San Francisco Bay. The northern limit is marked by a line from East Sisters Island to Point San Pablo. The southern limit is marked by a line from Brooks Island to the southern part of Southampton Shoal, thence to Bluff Point.

Method of Survey:-

A system of sounding lines about a mile apart was run between the six foot curves on each side of the Bay. These lines averaged (1650) meters distance apart. Between these additional lines were run from over the edge of the shoal waters on either side of the Bay extending out to about forty feet. These lines were about half way between the above mentioned lines. The average distance between these lines was (500) meters. These closer lines are mostly confined to the western part of the sheet in order to define the limits of the extensive flats on that side of the Bay. Just south of The Brothers Light a system of these closer lines was also run.

In the vicinity of Southampton shoal the lines average (700) meters apart. A line was also run in a North northwesterly and South southeasterly direction extending the length of the shoal. This line is about three and two-tenths (3.2) miles long.

Lines were run about (150) meters apart over the edge of the flats off Richardson Bay. These lines run from one fathom to fifteen fathoms or more, and were extended to the southward to cover the limits of the under water spit below the Ferry slip.

The launch used for the soundings was originally selected for the drag work, and was not as well adapted for soundings in this area as a smaller launch.

The party was in charge of Mr. A. O. Lustie, who was assisted by Mr. Paul V. Lane, Deck Officer. There were two leadsman, one of whom had had considerable experience and proved a good leadsman.

Currents:-

During the course of this work some difficulty was experienced by reason of the strong currents ensountered. No observations were made before the survey was started to determine the strength and direction of the current. During the course of the work it was noticed that the predictions contained in the back of the tide tables are apparently correct in regard to the times of slack water.

Weather Conditions:-

It was planned at first to work only on the small tides and during slack water, but the weather conditions were very bad during the early part of the seasen, and in order to accomplish this work it was necessary te make the survey on those days when the atmospheric conditions permitted the signals to be seen . It was very hazy during a great part of this work, and for this reason it was very hard to pick up good ranges. Whenever possible ranges were run.

On but two days was there sufficient chop to make the correct reading of the lead line difficult. Care was taken to get up and down casts in shoal water. In depths of over ten fathoms with the hand lead, it was not always possible to stop the headway of the launch sufficiently to get an up and down cast.

Tide Reducers:-

In accordance with my instructions all tidal data in connection with this survey has been forwarded to Washington for compilation. For this reason the soundings were not reduced or entered on the smooth sheet. Consequently it is left for the Office to determine the changes in this area, from that of the previous surveys. According to the best of my information from this and the wire drag examination, I believe there has been considerable shoaling in the area covered by this sheet. There has also been some shifting of the shoals previously charted. Much of this bottom is of soft silt, into which the ten pound lead sinks with the greatest ease for over a foot. It is readily understood how this bottom might be constantly in a state of motion.

Tides were observed at the following stations; Point San Pablo, Point San Quentin, California City, Sausalito, and West Berkeley.

Automatic tide gauges were in operation at Mc Nears Point and Point Richmond, also the permanent gauge at Fort Point.

Control:-

The signals used were originally located by triangulation or by topographers during the revision of the shoreline.

The scale of the sheet is 1: 20,000.

Respectfully Submitted,

L. O. Colbert.

Assistant, C. & G. Survey.
Chief, Wire Drag Party No. 4.

RIL

VEC
May 9,1917

HYDROGRAPHIC SHEET 3929.

San Francisco Bay, California, by party of Assistant L. O. Colbert in 1916.

Tides.

	Point Richmond.	San Quentin	Presidio
	Feet.	Feet.	Feet.
Mean lower low water, or plane of reference on staff	5.3	4.9	5.5
Mean range of tide	4.1	4.1	3.9

Hydrographic Sheet ~~3928~~ 3929. GLM 7/2/02

Positions protracted by Field Party. Soundings plotted and inked by S.L.R.

This survey was made principally to determine whether any material changes had taken place since the previous surveys.

That part of this work north of latitude 37°52', agreed fairly well with the old work, showing that a complete resurvey is unnecessary; but south of latitude 37°52', there were some differences that were so radical, that there remains considerable doubt concerning the accuracy of that part of this survey. Several obviously erroneous soundings add to this belief and a few ~~check~~ lines should be run to check the results of this portion of the survey.

A 50 foot sounding between positions 39 and 40 a is very doubtful; position 38 g is undoubtedly wrong, as a 95 foot sounding falls between a 37 and a 39 ft. sounding; and no time is given for the 8 ft. sounding between positions 3 and 4a.

A 3 foot shoal was found in latitude 37°51'08", longitude 122°28' 35", directly east of ⊙ Cuf, where the old survey shows 30 feet of water. The location of this shoal should be checked.

A tracing showing the differences in depth between the southern part of this sheet and the old work is attached to this sheet.

S. L. Rosenberg.

Soundings in feet.

May 23, 1917.

3929

Diag. Cht. No. 5530-4

Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: California

11—5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. 3929

LOCALITY:

San Francisco Bay

Northern part, - Southampton

Shoal to the Sisters.

1921

CHIEF OF PARTY:

F. G. Engle.

3929

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 3929

State . . . . . CALIFORNIA . . . . . .

General locality . . . . . San Francisco Bay, Northern part.

Locality . . . Southampton Shoal to The Sisters . . . . . .

Chief of party . . . . . F.G.Engle . . . . . .

Surveyed by . . . F.G.Engle, Ship; . M.E.Levy, Launch. . . .

Date of survey . . . Febr. - April, 1921. . . . . .

Scale . . . . . 1 to 20,000 . . . . . .

Soundings in . . . . . feet . . . . . .

Plane of reference . . . . . M.L.L.W. . . . . .

Protracted by J.W.Cox . . Soundings in pencil by J.W.C. .

Inked by A.Baer, F.M.Albert. Verified by A.Baer, F.M.Albert . .

Records accompanying sheet (check those forwarded):

Des. report, 1 Tide books, ____ Marigrams, 2 Boat sheets,

4 Sounding books, ____ Wire-drag books, ____ Photographs.

Data from other sources affecting sheet . . none . . . . . .

Remarks:

DESCRIPTIVE REPORT

To accompany Hydrographic sheet 3929

Southampton shoal to The Sisters
In structions dated, November 24th., 1920.

The work on this sheet consists of ship lines between those run by the party of L.O. Colbert in 1917 and the development of Southampton shoal and the shoal area including Red Rock. Inshore work by motor sailing launch was also done on the eastside of the Bay between Pt. Richmond and Pt. San Pablo in accordance with par. 9, Instructions dated July 25, 1919.

The Bromide of Colberts sheet was used as a boatsheet for the ship work and another boatsheet was made for the launch work between Pt. Richmond and Pt. San Pablo. On this sheet, additional small signals for the launch work were located by plane table.

In this section of the Bay the ebb currents were very strong and it was found that sounding could not be done on the ebb on account of inaccuracy due to the bight of the leadline, making soundings two deep. The lines most affected are 1 - 39 A day and 12 - 20 C day, which were run against a strong ebb current. On the majority of the work a leadline of Sampson Mahogany tiller rope No. 8 (phosphor bronze center) was used with 12# lead. Two other leadlines were tried but proved unsatisfactory on account of shrinkage. These were made specially for the purpose of trial on sounding work by the Sampson Cordage Company. One was a cotton line with phosphor bronze center and a rubber coating over the wire. The other was a hemp braided line over the same wire center, but without the rubber covering. The braiding of both of these lines was quite loose. Shrinkage during the first hours work was considerable and the wire protruded through the braid covering. The mahogany tiller rope No. 8 is excellent material for hand leadlines as there is practically no shrinkage or stretch in this line and more accurate work can be done with it t than with the ordinary cotton braid lines.

In accordance with the instructions for this work the shoal areas of Southampton shoal and Red Rock were developed. The work shows a least depth of 14 feet on Southampton shoal at the present time. No development was made of Whiting and Invincible rocks. On the shoal extending southward from Red Rock the least water found was 28 feet where 42 feet is shown on chart. In the vicinity of the 42 foot spot $\frac{1}{4}$ mile east of California Point shoaler water is indicated by the new work while no indication of the 33 foot spot $\frac{1}{2}$ mile 120° from California Point was found although the sounding line at this point indicates a depth of about 36 feet when corrected for probable current error

The launch work shows some shoaling has occurred inshore of Castro Rocks and inshore of the outer end of the Standard Oil dock.

Organization of Party.

Ship work.

F.G. Engle, H&G Engr. Chief of Party, in Charge R ✓ and plotting.
R.P. Eyman, H&G Engr. L ✓
R.F.A. Studds, Jr. H&G Engr.
L.M. Zeskind, Jr. H&G Engr. Recording
H.M. Sipple, W.O. lc.
C.P. Monaghan, QM. Leadsman.

Launch work.

Maurice E. Levy, H&G Engr. In charge R ✓ plotting.
L.M. Zeskind, Jr. H&G Engr. L ✓
J.R. Marion, Asst te Engr.
H.M. Sipple, W.O. lc. Recording.
C.P.Monaghan and F.M. Criswell, Qm's. Leadsman.

Plane of Reference M.L.L.W. ± 5.1 feet on staff.
Tide staff at Standard Oil dock, Richmond.

F. G. Engle

F. G. ENGLE
H & G Engr.,
Commanding.

STATISTICS

Hydrographic sheet #3929

Date	Boat	Letter	Vol.	Miles stat.	Soundings	Positions	Angles
Feb. 3	Ship	A	1	9.9	290	54	108
Mar. 14	"	B	1	27.4	583	130	260
Mar. 15	"	C	1	21.8	537	111	222
Mar. 17	"	D	1	14.1	402	75	150
Mar. 18	"	E	2	6.9	201	38	76
Mar. 25	"	F	2	17.0	482	102	203
Mar. 31	"	G	2	11.3	289	56	112
April 7	"	H	2	19.1	393	106	212
April 6	Motor sailer	A	1	13.5	524	111	217
April 7	"	B	1	21	661	163	314
April 8	"	C	1	10.3	300	69	106
April 8	"	C	2	5.3	170	33	62
Total:				177.6	4832	1048	2042

To accompany Hyd. Sheet #3929.

U S S NATOMA.

DEVIATION TABLE 1921.

Ship's Head	Deviation			Ship's Head	Deviation		
°	°	'		°	°	'	
North	6	04	W	East	1	28	W
5	6	00		95	0	48	
10	5	56		100	0	07	W
15	5	52		105	0	33	E
20	5	48		110	1	14	
NNE 22½	5	46		ESE 112½	1	36	
25	5	43		115	1	42	
30	5	36		120	1	53	
35	5	29		125	2	05	
40	5	22		130	2	17	
NE 45	5	16		SE 135	2	28	
50	4	36		140	2	55	
55	3	54		145	3	22	
60	3	14		150	3	50	
65	2	33		155	4	17	
ENE 67½	2	12		SSE 157½	4	32	
70	2	07		160	4	35	
75	1	57		165	4	40	
80	1	47		170	4	46	
85	1	37		175	4	51	
East	1	28	W	South	4	57	E
South	4	57	E	West	0	37	W
185	4	54		275	1	06	
190	4	51		280	1	35	
195	4	47		285	2	04	
200	4	44		290	2	33	
SSW 202½	4	42		WNW 292½	2	48	
205	4	34		295	2	58	
210	4	19		300	3	18	
215	4	04		305	3	38	
220	3	49		310	3	58	
SW 225	3	34		NW 315	4	18	
230	3	21		320	4	42	
235	3	08		325	5	06	
240	2	55		330	5	30	
245	2	42		335	5	54	
WSW 247½	2	34		NNW 337½	6	07	
250	2	13		340	6	07	
255	1	31		345	6	06	
260	0	49		350	6	05	
265	0	07	E	355	6	05	
West	0	37	W	North	6	04	W

E.A.L.

COPY TO FIELD RECORDS.

41/VFB

August 2, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 3929 (additional work)

Locality: San Francisco Bay, Cal.

Chief of Party: F. G. Engle in 1921

Plane of reference is mean lower low water, reading

5.1 ft. on tide staff at Standard Oil Dock, Pt. Richmond.

Condition of records: Satisfactory.

Chief, Division of Tides and Currents.

DIRECTOR
ADDRESS THE ~~SUPERINTENDENT~~
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO. 41/VFB

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON August 2, 1921.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 3929 (additional Work)

Locality: San Francisco Bay, Cal.

Chief of Party: F. G. Engle in 1921

Plane of reference is mean lower low water, reading

5.1 ft. on tide staff at Standard Oil Dock, Pt. Richmond.

Condition of records: Satisfactory.

G T Rude

Chief, Division of Tides and Currents.

Verification Report of Hyd. 3929.

The protracting on this sheet was fair; the plotting of soundings was poor. Them were poorly spaced, illegible and not properly selected.

As a whole the new work and the old agree very well. There will be found throughout differences here and there of two feet or so which can be expected. Forty-three feet 78-79 H falls on 48 ft. 10-11 C (1916). Other soundings of the old work which appear to be doubtful when the new ones are drawn are noted on the sheet.

In respect to the D.R. statement of the effects of feeling several lines, the only probable effect seems to be on the line between pos. 11A & 13A as can be readily seen from the ones.

The development around the 10 ft shoal north end of Southampton shoal does not appear to be sufficiently close to warrant substitution for it by the 14 ft. least depth found — the new work.

The indications are that the 26 ft. spot should replace the 22 ft. as shown on the chart, on shoal extending south of Red Rock. Still the developing lines are 200 meters apart which cannot be considered close.

Respectfully submitted,

Edwin Bell
Draftsman

P.S. The control work from 12A to 26 C was verified by Lt. Wm. Albert. The remainder of control work and all of ship was verified by writer.

ADDRESS THE DIRECTOR
U.S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-MEM

DEPARTMENT OF COMMERCE

U.S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS.

REPORT ON HYDROGRAPHIC SHEET No. 3929.

Surveyed in 1921.

Chief of Party: F. G. Engle. Surveyed by F. G. Engle and M. E. Levy.

Protracted and soundings plotted by J. W. Cox.

Verified and inked by A. Baer and F. M. Albert.

1. The records conform to the requirements of the General Instructions except that the boats' courses are frequently omitted.

2. The plan and character of development fulfill the requirements of the General Instructions except that only about one-half of the buoys were located. (See par. 372 of General Instructions).

3. The plan and extent of development satisfy the specific instructions (dated July 25, 1919), except that the development on Southampton Shoal and the 22 foot spot south of Red Rock is not sufficiently close to warrant the removal of the old shoal soundings although there has undoubtedly been a deepening of these two areas.

4. The sounding crossings are generally adequate with some exceptions, the reasons for the discrepancies being noted in the descriptive report.

5. The information is sufficient to permit the depth curves to be completely drawn.

6. All the plotting of the sheet was done in the office.

7. No additional surveying is required within the area covered by this sheet, unless further development be considered desirable on the two shoals noted in paragraph 3.

8. Character and scope of the surveying are fair.

9. Reviewed by E. P. Ellis, November, 1921.

3929 Add'l Wk.

3929 Add'l Wk.

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. Patton, Director

State: California

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } *Sheet No.* 3929 Add'l Wk.

LOCALITY

Shoal Area Around Whiting Rk.

San Francisco Bay

1931

CHIEF OF PARTY

G. C. Jones

U. S. GOVERNMENT PRINTING OFFICE: 1930

Form 537
11—5812

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 3929 Add'l Wk.

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. .....

REGISTER NO. 3929 Add'l Wk.

Additional work on original sheet

State California

General locality San Francisco Bay

Locality Shoal Area Around Whiting Rk.

Scale ..... Date of survey Sept. 29, 1931

Vessel Launch # B414

Chief of Party G.C. Jones

Surveyed by G.C.J.

Protracted by J.D. Tovey

Soundings penciled by J.D. Tovey

Soundings in ~~fathoms~~ feet

Plane of reference .....

Subdivision of wire dragged areas by .....

Inked by G.C. McGlasson

Verified by G.C. McGlasson

Instructions dated Sept. 8, 1930

Remarks: .....

GPO

Level record between staff and B. M. 1, San Pablo Pt. (serial no. 351)
San Francisco Bay, California, Sept. 28, 1931.

	Ft.	
Elev.	7.3	B. M. 1 (above MLLW, from Sp. Pub. #141)
B. S.	3.985	
H. I.	11.285	
F. S.	2.453	
Elev.	8.832	11 ft. mark on staff.
Elev.	8.832	11 ft. mark on staff
B. S.	2.451	
H. I.	11.283	
F. S.	3.983	
Elev.	7.3	B. M. 1.

Elev. of B. M. 1 above zero of staff 9.468 ft.
Reducer to be applied to staff readings to determine height above reference plane 2.17.

Staff readings. San Pablo Pt. Sept. 29, 1931

Time Hrs.	Min.		Reading Feet	Tenths	Height above ref. plane Ft.
A. M.					
8	000		4	3	2.1
8	15		4	4	2.2
8	30		4	5½	2.4
8	45		4	7	2.5
9	00		4	9	2.7
9	15		5	2	3.0
9	30		5	4	3.2
9	45		5	6½	3.5
10	00		5	9	3.7
10	30		6	4	4.2
10	45		6	5½	4.4
11	00		6	7½	4.6
11	15		6	9½	4.8
11	30		7	1½	5.0
11	45		7	3	5.1
12	00		7	4½	5.3
12	15	P. M.	7	5½	5.4

Note: Original record in same volume with observations at other stations and will be forwarded later.

Report of examination of ridge from Brothers Id. to Whiting Rock. San Francisco Bay, California, Sept. 28-29, 1931.

The examination called for in the instructions of Sept. 8, 1930 was made on the above dates. By the time the tide staff was erected and leveled, reconnaissance made, and signal built on Triangulation Station "San Pablo Ridge,1897" the wind was too strong to make hydrographic examination and that was done on the29th.

After sounding across the ridge with a scheme of 50 meter lines, all run with the current, an examination was made of the shoal indications 200 meters NE of the buoy, also additional examonation of the balance of the ridge. This was done by drifting across the ridge the while sounding continuously with the lead and holding the launch anchor suspended at a measured depth. The skiff was anchored to use, in connection with the buoy as a marker for this work. The entire ridge was covered in that manner by not less than thirty such lines, but in order to avoid confusion the lines were not plotted or recorded unless additional information of value was obtained.

A drag was improvised with leadlines and was used to dtermine where the least water oh the ridge was to be found. It was not used to determine least depth as the equipment at hand did not admit of sufficient certainty as to drag depth.

The shoaler portions of the ridge are clearly marked with tide rips and mud streaks.

The ridge, as may be expected is rocky, but appears to be a loose crumbling formation. Cracks, even in the higher portions are fillrd with mud and loose boulders lay at the sides of the ridge.

The shoalest depth found between the island and the nearest buoy was 13 ft. 607 meters, 224° (true) from Brothers Id. Light. 7 ft. was found 970 meters 215° (true) from the light but is not considered as dangerous as the 13 ft. depth because of being inside the triangle formed by the two danger buoys and the lighted red buoy, and is, for that reason, less apt to be struck by a vessel. As stated above, both spots are marked by tide rips.

G. C. Jones,
Chief of Party.

See letter 465(1930)

December 17, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
1 volume/s of sounding records for

HYDROGRAPHIC SHEET 3929 - Additional Work

Locality San Francisco Bay - Shoal Area around Whiting Rock.

Chief of Party: G. C. Jones in 1931
Plane of reference is mean lower low water, reading
2.2 ft. on tide staff at Point San Pablo
7.3 ft. below B. M. 1

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Harmon

Acting Chief, Division of Tides and Currents.

Section of Field Records

Sheet No 3929 Addl Work
Surveyed in 1931
Chief of Party E.C. Jones
Surveyed by E.C. Jones
Protracted by J.D. Torrey
Soundings plotted by J.D. Torrey
Verified & Inked by E.C. McGlocklin

1. The records conform to the requirements of the general instructions.
2. The plan and character of development fulfill the requirements of the general instructions.
3. The sounding line crossings are adequate.
4. The canal depth curves can be completely drawn within the limits of the specified work.
5. The field ~~plotting~~ plotting was completed to the extent prescribed in general instructions.

6. The office draftsman did not have to do over any part of work done by field party.

7. There are no junctions with adjoining sheets as this is additional work on H 8929.

Respectfully submitted,

E. C. McGlasson

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 82-DRM

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 3929
(Additional Work)

Vicinity of Point San Pablo, San Francisco Bay

Surveyed in 1931

Instructions dated September 8, 1930

Chief of Party, G. C. Jones

Surveyed by G. C. J.

Protracted and soundings plotted by J. D. Torrey

Verified and inked by G. C. McGlasson

1. Purpose of survey

This examination was made pursuant to a reported striking of a Standard Oil vessel between the Brothers Islands and Whiting Rock (13 foot sounding on sheet). For history see Chart Div. letter 465 - 1930.

2. Conformity with specific instructions

While it is believed that the present examination reasonably disproves the existence of any obstruction in the reported position and it is felt that the striking must have occurred in close proximity to the 13 foot spot (see letter referred to above), yet in view of the fact that the rocks that are known to exist here are of very small extent, it would have been very desirable to have had a closer development between Whiting Rock and the Brothers. As near as can be determined from the sounding records the drift lines were run across the known obstructions, with a view to finding less water, rather than in the area where the new obstruction was reported.

3. Additional work

Owing to the fact that vessels use the channel between Whiting Rock and the Brothers, it is recommended that when opportunity affords the area be dragged and if this is not practicable, a more intensive lead line development should be made.

4. Buoy locations

A comparison of the field locations of the buoys in this vicinity with their charted positions indicates that the Gas Buoy No. 6 is actually about 84 meters from its charted position and that the horizontal striped buoy near Whiting Rock is about 84 meters southward of its charted position. The buoy near Invincible Rock was found in its correct position.

It is believed that, on account of its importance to vessels using the channel between The Brothers and Whiting Rock, the Lighthouse Bureau should be notified that the buoy near Whiting Rock is considerably off its charted position. It will be recalled that the Standard Oil vessel, which reported having struck in this vicinity, found this same buoy to be about 600 feet to the southward of its charted position (Chart Division letter 465 - 1930), and probably accounted for the striking of that vessel. If vessels of 27 to 30 foot draft use this channel, then it would seem that a more logical position for this buoy would be to the northward of Whiting Rock.

5. Reviewed by A. L. Shalowitz, March 1932.

Approved:

Chief, Section of Field Records (Charts)

Chief, Section of Field Work (H. and T.)